

# METHOD AND APPARATUS FOR DECODING GPS SATELLITE DATA AT LOW SIGNAL TO NOISE LEVELS.

## ABSTRACT OF THE DISCLOSURE

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A method of decoding a received phase modulated carrier signal comprising the following steps: (A) computing a total probability of a current data bit being “one” or “zero” at a time epoch by computing a plurality of probabilities of phase transitions at a plurality of time epochs, each probability of a phase  
10 transition at one time epoch being a probability of a phase transition between a current phase of the received phase modulated signal and a phase corresponding to a previously computed data bit; and (B) outputting the current data bit as being “one” or “zero” at the time epoch based on the computed in step (A) total probability.

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